Frederick SAM

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RESEARCH

Interests: Physics · Geophysics · Hydrogeology

Areas: Electrical and Electronic Engineering · Biophysics · Environmental Engineering · Civil and Structural Engineering · Electronic, Optical and Magnetic Materials · Geochemistry and Petrology

RESEARCH SUMMARY

25	210	7	5	1.01	18%
Publications	Citations	h-index	i10-index	Field-weighted impact	World top 10%

Counted from the 25 publications listed below, 2005–2026. Field-weighted impact is the mean over the 17 works scored for it; 1.00 is the world average for works of the same field, type and year. 3 of the 17 papers scored for it are among the world's most cited tenth for their field, type and year.

POSITIONS

Senior Lecturer/Associate Professor 2002–present
Physics, University of Cape Coast, Cape Coast, Ghana

EDUCATION AND QUALIFICATIONS

PhD 2014
Earth Sciences, University of Birmingham, Birmingham, United Kingdom

PUBLICATIONS

Journal articles 24

1. Maximillian-Robert Selorm Doku, Isaac Larbi, **Frederick Sam**, Kingsley Kwaah Tandoh, Paulina Ekua Amponsah (2026). A preliminary investigation into the relationship between seismicity and precipitation in South Eastern Ghana. *Arabian Journal of Geosciences*. https://doi.org/10.1007/s12517-026-12501-8
2. **Frederick Sam** (2026). Empirical Relation between Specific Absorption Rate and Distance from Mobile Phones: SAR and phone distance relation. *Journal of Science and Technology (Ghana)*. https://www.ajol.info/index.php/just/article/view/335199
3. Samuel Osei, Abdul-Razak Fuseini, Emmanuel Quarshie, Collins Kafui Azah, Richard Dogbey, Philip Deatanyah, Christiana Subaar, **Frederick Sam**, Joseph Kwabena Amoako (2026). Radiofrequency Baseline Assessment of a Large Mining Concession Enclave and Affected Communities. *Journal of Science and Technology (Ghana)*. https://doi.org/10.4314/just.v44i1.8
4. Patrick Davies, Ossénatou Mamadou, Emmanuel Quansah, Jeffrey N. A. Aryee, Winifred A. Atiah, Leonard K. Amekudzi, **Fredrick Sam**, Sylvie Galle, Jérome Demarty (2026). Statistical Evaluation of Changes in Surface Radiative Flux Across Different Sites in West Africa. *Advances in Meteorology*. https://doi.org/10.1155/adme/3703490
5. Samuel Osei, Collins Kafui Azah, Emmanuel Quarshie, Abdul-Razak Fuseini, Richard O. G Dogbey, Philip Deatanyah, **Frederick Sam**, John Owusu-Banahene, Joseph Kwabena Amoako (2025). Analysis of Attenuation Effectiveness of Anti-Radiation Phone Shields. *Journal of Science and Technology (Ghana)*.

https://doi.org/10.4314/just.v43i3.6

6. Isaac Kofi Owusu, **F Sam** (2025). Application of the scoping tool and AMBER model in radiological safety assessment of the barrier systems of the borehole disposal system for the disposal of disused sources in …. *Radiation Physics and Chemistry*. https://www.sciencedirect.com/science/article/pii/S0969806X24007655

7. christiana subaar, **Frederick Sam** (2025). Determination of Ambient Dose Equivalent Using a Microprocessor-Controlled Universal Reference-Class Dosemeter. *Journal of Science and Technology*. https://journal.knust.edu.gh/index.php/just/article/view/1765

8. Samuel Osei, Emmanuel Quarshie, Collins Kafui Azah, Abdul-Razak Fuseini, Richard Dogbey, Philip Deatanyah, Godfred Bright Hagan, Joanna Aba Modupeh Hodasi, **Frederick Sam**, Joseph Kwabena Amoako (2025). Effect of elevation on cumulative radiofrequency exposure from multiple communication towers. *Radiation Protection Dosimetry*. https://doi.org/10.1093/rpd/ncaf068

9. Evans Manu, Yvonne Sena A. Loh, **Frederick Sam**, Marco De Lucia (2025). Evolution of groundwater chemistry in Birimian and Voltaian Supergroup aquifers of Bole District, Northern Ghana: Insights from combinatorial inverse geochemical modeling. *The Science of The Total Environment*. https://doi.org/10.1016/j.scitotenv.2025.179773

10. christiana subaar, **Frederick Sam** (2025). Stability of Calibration Factors of Survey Meters: A Five-Year Comparative Study. *Iranian Journal of Medical Physics/Majallah-I Fīzīk-I Pizishkī-i Īrān*. https://www.researchgate.net/profile/Christiana-Subaar-2/publication/395938917_Stability_of_Calibration_Factors_of_Survey_Meters_A_Five-Year_Comparative_Study/links/68d96576d221a404b2a31e03/Stability-of-Calibration-Factors-of-Survey-Meters-A-Five-Year-Comparative-Study.pdf

11. Charles Kansaana, Lordford Tettey-Larbi, Augustine Faanu, **Frederick Sam**, Emmanuel Akrobortu, Emmanuel Akomaning-Adofo, Adriana Asare Ampene, Rita Kwabea Osei, Ruth Araba Tawiah Annan, Edit Tóth-Bodrogi, Tibor Kovács, Amin Shahrokhi (2024). Environmental Radiological Impact and Risk Assessment of Natural Radioactivity at the Heap Leach Facility of Tarkwa Goldmine, Ghana: Radiotoxicity and Public Exposure. *Environments*. https://doi.org/10.3390/environments11080168

12. Collins K Azah, Philip Deatanyah, Prince M Appiah, Samuel Osei, Joseph K Amoako, **Frederick Sam** (2023). Evaluation of calibration factors of digital survey meters in a secondary standard dosimetry laboratory. *Radiation Protection Dosimetry*. https://doi.org/10.1093/rpd/ncad268

13. Evans Manu, George Yamoah Afrifa, Theophilus Ansah-Narh, **Frederick Sam**, Yvonne Sena Akosua Loh (2021). Estimation of natural background and source identification of nitrate-nitrogen in groundwater in parts of the Bono, Ahafo and Bono East regions of Ghana. *Groundwater for Sustainable Development*. https://doi.org/10.1016/j.gsd.2021.100696

14. **Frederick Sam** (2021). Optimal soft error mitigation in wireless communication using approximate logic circuit. *Journal of Sustainable computing: Informatics and Systems*.

15. Joseph Henry Anajemba, James Adu Ansere, **Frederick Sam**, Celestine Iwendi, Gautam Srivastava (2021). Optimal soft error mitigation in wireless communication using approximate logic circuits. *Sustainable Computing Informatics and Systems*. https://doi.org/10.1016/j.suscom.2021.100521

16. Cosmos S. Wemegah, Edmund I. Yamba, Jeffrey N.A. Aryee, **Fredrick Sam**, Leonard K. Amekudzi (2020). Assessment of urban heat island warming in the greater accra region. *Scientific African*. https://doi.org/10.1016/j.sciaf.2020.e00426

17. James Adu Ansere, Mohsin Kamal, Eric Gyamfi, **Frederick Sam**, Muhammad Tariq, Abbas Mohammed (2020). Energy efficient resource optimization in cooperative Internet of Things networks. *Internet of Things*. https://doi.org/10.1016/j.iot.2020.100302

18. **Frederick Sam**, George Amoako, Baah Sefa-Ntiri, Anthony Twum, P. Mensah-Amoah, John Tellam (2018). Characterization of Potential Direct Recharge in the Gold Mining District of South-Western Ghana Using the Hydrus-1D Computer Code. *Journal of Geography and Geology*. https://doi.org/10.5539/jgg.v10n3p1

19. George Amoako, Patrick Mensah-Amoah, **Frederick Sam**, Samuel S Sackey (2018). Some Mechanical Properties of Coconut Fiber Reinforced Polyethylene Composite to Control Environmental Waste in

Ghana. *Energy and Environment Research*. https://doi.org/10.5539/eer.v8n1p1

20. **FREDERICK SAM** (2016). Correlation Between Geological Logs and Geophysical Logs to Estimate Aquifer Positions in the Crystalline Basement Rocks of the Birimian System, Ghana. *Journal of Environment and Earth Science*. https://ir.ucc.edu.gh/items/9b771df5-de1a-422c-8afa-bff2b9e4e47e

21. Sulemana S. Abukari, **Frederick Sam**, Samuel Y. Mensah, Natalia G. Mensah, Rabiu Musah, Anthony Twum, Patrick M. Amoah, Alfred Owusu (2016). Direct Current Generation in Carbon Nanotubes by Terahertz Field. *World Journal of Condensed Matter Physics*. https://doi.org/10.4236/wjcmp.2016.61008

22. George Amoako, Zhou Ming, Ye Rian, Patrick Mensah Amoah, Anthony Twum, **Frederick Sam** (2015). Connecting DNA origami structures using the biotin-streptavidin specific binding. *AFRICAN JOURNAL OF BIOTECHNOLOGY*. https://doi.org/10.5897/ajb2015.14697

23. **F Sam** (2013). Gross alpha and beta activity and annual committed effective doses due to natural radionuclides in some medicinal plants commonly used in Ghana. *Int J Sci Technol*. https://www.researchgate.net/profile/Frederick-Sam-2/publication/326546292_Gross_Alpha_and_Beta_Activity_and_Annual_Committed_Effective_Doses_due_to_Natural_Radionuclides_in_some_Medicinal_Plants_commonly_used_in_Ghana/links/5b5474a845851507a7bd1b87/Gross-Alpha-and-Beta-Activity-and-Annual-Committed-Effective-Doses-due-to-Natural-Radionuclides-in-some-Medicinal-Plants-commonly-used-in-Ghana.pdf

24. S.Y. Mensah, N.G. Mensah, V.W. Elloh, AK Twum, **Frederick Sam**, F.K.A. Allotey (2005). Propagation of ultrasonic waves in bulk gallium nitride (GaN) semiconductor in the presence of high-frequency electric field. *Physica E Low-dimensional Systems and Nanostructures*. https://doi.org/10.1016/j.physe.2005.05.050

Theses 1

1. **Frederick Sam** (2014). The assessment of potential impacts of open cast gold mining on the regional groundwater flow system in hard rock environments: with special reference to Ghana. *University of Birmingham*. https://etheses.bham.ac.uk/id/eprint/4486/